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9

10

11 STATE WATER RESOURCES CONTROL BOARD

12

OF THE STATE OF CALIFORNIA

13

14

In the Matter of the Petition of

) No.

15

CHEVRON PRODUCTS COMPANY,
16 CONOCOPHILLIPS COMPANY, SHELL
OIL PRODUCTS US, TESORO
17 MARKETING & REFINING COMPANY,
VALERO REFINING COMPANY -
18 CALIFORNIA, and WESTERN STATES
PETROLEUM ASSOCIATION

) VERIFIED REQUEST FOR STAY

19

Request for Technical Report, California
20 Regional Water Quality Control Board, San
Francisco Bay Region

21

California Water Code Section 13267

22

23

24 In accordance with Water Code section 13321 and section 2053 of Title 23 of the
25 California Code of Regulations, Chevron Products Company, ConocoPhillips Company,
26 Shell Oil Products US, Tesoro Refining & Marketing Company, and Valero Refining
27 Company-California (collectively, "Refinery Petitioners"), and the Western States
28

1 Petroleum Association (together with the Refinery Petitioners, "Petitioners") hereby request
2 a stay of the Request for Technical Reports issued on May 7, 2007 to the Refinery
3 Petitioners by the Executive Officer of the California Regional Water Quality Control
4 Board, San Francisco Bay Region ("Water Board") pursuant to Section 13267 of the
5 California Water Code ("13267 Letter"). A copy of the 13267 Letter is attached as Exhibit
6 1 to the Verified Petition for Review and Request for Hearing ("Petition") filed herewith.
7 The grounds for stay are set forth below and more fully explained in the Petition and
8 supporting declarations filed with the State Water Resource Control Board ("State Board")
9 on the date hereof and incorporated herein by reference. Because of the imminent
10 deadlines contained in the 13267 Letter, Petitioners request that the State Board conduct a
11 hearing on this matter as soon as possible.

12 INTRODUCTION

13 The 13267 Letter requires Refinery Petitioners to conduct a petroleum refinery
14 mercury mass balance analysis — *i.e.*, quantify the amount of mercury entering and leaving
15 the refineries through all potential pathways — and to study the "fate" of that mercury. On
16 its face, the 13267 Letter outlines an extraordinary research effort, the scope of which is
17 unnecessary to protect water quality, and that will impose extraordinary and potentially
18 unachievable burdens on the Bay Area refineries. Moreover, Refinery Petitioners must
19 complete this unprecedented effort in approximately a one-year period, beginning with
20 sampling plan submittals due June 15, 2007. The 13267 Letter fails to satisfy the statutory
21 criteria that the request constitute an investigation of water quality and that "the burden,
22 including costs, of these reports shall bear a reasonable relationship to the need for the
23 report and the benefits to be obtained from the reports." Water Code, § 13267(a) and (b).

24 Due to the substantial burden and prejudice that will be suffered by Petitioners if
25 they must comply with the requirements and deadlines of the 13267 Letter while the State
26 Board's review is pending, Petitioners seek a stay of the 13267 Letter, as described below.

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1 BACKGROUND

2 On February 17, 2005, following the Water Board's completion of a Total
3 Maximum Daily Load ("TMDL") for mercury, the Water Board issued 13267 letters to the
4 Bay Area refineries requiring them to conduct a collaborative study to estimate "the total
5 mass of mercury emitted directly to the atmosphere per year" from the refineries on a
6 combined basis and how much of this mercury would be discharged to the Bay via direct or
7 indirect deposition (the "2005 Letter"). The Water Board stated that this information was
8 needed "in order to better assess the significance of petroleum refineries as a source of
9 mercury discharges into San Francisco Bay, as well as to more accurately adapt
10 implementation actions for petroleum refineries commensurate with their mercury loads to
11 the Bay as part of the Mercury TMDL." See 2005 Letter, at p. 2, attached as Exhibit 6 to
12 the Petition.

13 Petitioners have complied with this request and devoted significant efforts to
14 developing an appropriate sampling, analytical and calculation methodology plan for the air
15 deposition study and conducting a pilot study to resolve threshold technical difficulties and
16 challenges. As reported to the Water Board by Petitioners, development of the work plan
17 and completion of the pilot study have taken longer to complete than originally anticipated
18 due to the complex technical issues presented, and a revised submittal date of February
19 2009 was requested. The Water Board granted an extension until August 2008, and
20 Petitioners are continuing to pursue this effort and expect to complete the original air
21 deposition study by the accelerated deadline.

22 On May 7, 2007, while the work on the original air deposition study was underway,
23 the Water Board issued a new 13267 Letter requiring Petitioners to conduct a "mass
24 balance" analysis of mercury entering and leaving the refinery (including measurement of
25 the amount of mercury in the incoming crude oil, in all non-wastewater and product
26 streams); to account for mercury emissions from all combustion sources, fuel gas, and flare
27 systems at the refinery, including during turnarounds; and to evaluate the "fate" of this
28 mercury and attempt to determine how much of it could enter San Francisco Bay via direct

1 deposition to the Bay surface or deposition elsewhere in the watershed, where it can enter
2 the Bay through tributaries or urban runoff. These tasks represent an enormous and
3 unnecessary expansion of the air deposition study.

4 LEGAL GROUNDS FOR STAY

5 Under section 2053 of the State Board's regulations (23 Cal. Code Regs. § 2053), a
6 stay of the effect of an order shall be granted if petitioner shows:

- 7 (1) substantial harm to petitioner or to the public interest if a stay is not
8 granted;
- 9 (2) a lack of substantial harm to other interested parties and to the public
10 if a stay is granted; and
- 11 (3) substantial questions of fact or law regarding the disputed action
12 exist.

13 The requirements for issuance of a stay are clearly met in this case.

14 (1) Petitioners Will Suffer Substantial Harm If a Stay Is Not Granted.

15 Petitioners challenge the May 2007 13267 Letter on the grounds that it requires
16 them to conduct an elaborate research project that has no rational nexus to protection of
17 water quality and that, in any event, fails to satisfy the mandatory statutory criterion that
18 "the burden, including costs, of these reports shall bear a reasonable relationship to the need
19 for the report and the benefits to be obtained from the reports." Water Code, § 13267(a)
20 and (b). As described above, Petitioners are already conducting an air deposition study
21 pursuant to a 13267 letter issued by the Water Board in February 2005, and are now being
22 required to significantly expand the scope of that study before it has even been completed.¹

23 As discussed in detail in the Petition, hundreds of additional samples will be
24 required under the expanded study requirements imposed by the 13267 Letter, including
25 crude oil samples, samples of waste streams, product samples, sampling during flaring
26

27 ¹ Petitioners' request for stay of the 13267 Letter does not include the provision
28 extending the deadline for the original air deposition study to August 2008.

1 events and sampling during refinery turnarounds. Many of the sample locations have
2 significant worker safety and logistics issues, and there are no established protocols for
3 sampling many of these streams. Additional protocols will have to be developed and tested
4 (many under conditions that could pose substantial safety risks), additional personnel
5 training will have to occur, and much greater attention to data quality assurance will be
6 needed. All of these considerations translate to significant additional costs and burdens,
7 well beyond those assumed as part of the original air deposition study. For example,
8 estimating the amount of mercury in crude oil — while seemingly straightforward — is
9 technically complex and burdensome in that the mercury content of different crudes is
10 highly variable. This variability extends within the same types of crudes and even across
11 the crude produced from the same oil field. It is also unclear how much of this variation is
12 due to differences in the crude or to the inherent variability of the analytical methods used.
13 The 13267 Letter also requires Petitioners to characterize air emissions during facility
14 turnarounds. There are no sampling protocols in place for conducting this type of
15 monitoring, and the challenges associated with obtaining representative samples are
16 enormous. Turnarounds require significant advance planning to provide for operational
17 needs and for facility and personnel safety; this sampling will add significantly to the
18 challenge, if it is feasible at all. Comparable technical and safety hurdles are presented by
19 the requirement to sample flaring events for mercury.

20 In addition, the 13267 Letter requires an evaluation of the “fate” of the mercury that
21 is emitted to the atmosphere, assuming acceptable and reliable sampling protocols can be
22 developed. In essence, Petitioners are required to determine where each molecule emitted
23 by the refineries ends up, specifically, whether it will deposit on the surface of the Bay or
24 elsewhere in the San Francisco Bay watershed where it might ultimately be discharged to
25 the Bay. This requirement is being imposed despite the fact that: (i) the pilot study
26 recently completed by one of the Refinery Petitioners as part of the ongoing air deposition
27 study indicates that, under the conditions in effect at the time of the pilot study, mercury
28 emissions from refinery fuel gas combustion were extremely low (a small fraction of a

1 kilogram per year); and (ii) updated estimates of regional mercury emissions provided by
2 the National Atmospheric Deposition Program/Mercury Deposition Network indicate that
3 loading from aerial deposition is approximately 8 kg/yr, as compared with 27 kg/yr
4 included in the TMDL. See Declaration of Khalil Abusaba in Support of Verified Petition
5 and Request for Stay, p. 5. For all practical purposes, the 13267 Letter requires Refinery
6 Petitioners to conduct a huge research project to re-evaluate the science surrounding
7 atmospheric transport of mercury despite the likely *de minimis* nature of their own
8 emissions. Given the many other categories of facilities which are sources of mercury
9 emissions to the air (*none* of which are being required to conduct similar studies),
10 Petitioners are at a loss to understand how they are expected to distinguish refinery mercury
11 emissions from other mercury that is emitted from other sources, some of which may be
12 located thousands of miles away. Even if this distinction could be made, the conclusions
13 that would be drawn from the modeling studies would be so highly qualified that they
14 would not serve as an appropriate basis for regulatory decision-making, the economic
15 consequences of which could be vast.

16 Finally, completion of these tasks is infeasible within the timeframe set forth in the
17 13267 Letter, or indeed within any reasonable timeframe. While some of the information
18 requested by the letter may be reasonably obtainable over the one-year period allowed for
19 the study (*e.g.*, measurement of mercury in fuel gas), other data could only be collected
20 after appropriate sampling methodologies and protocols are developed. Beyond that,
21 models allowing for reasonable interpretation of the data would need to be created. This
22 work would take well more than a year. In the case of crude oil, the high degree of
23 variability precludes obtaining representative data within the one-year time frame of the
24 study. Similarly, turnarounds are not conducted annually and cannot be accelerated to
25 accommodate the study requirements.

26 At the very least, completion of even a portion of the work required by the 13267
27 Letter would be complex, time-consuming and resource-intensive, and the attendant costs
28 in terms of dollars, personnel and potential disruption to operations would be significant.

1 Even if these challenges could be met, data would need to be collected over a period of
2 many years, far beyond the time frame allowed by the 13267 Letter, before reliable
3 conclusions could be drawn from the data. Refinery Petitioners will suffer substantial harm
4 by being compelled to undertake large investments of effort and resources to produce a
5 mass balance study which is technically unsound and which, in comparison to the ongoing
6 air deposition study, will provide no additional benefit in terms of protecting water quality.
7 If a stay is not granted, Petitioners must immediately commence these efforts in order to
8 have any hope of demonstrating even good faith progress on a mass balance study by the
9 August 2008 deadline. Indeed, Petitioners are already struggling to meet the initial
10 deadline of June 15, 2007 for producing a sampling plan. Petitioners therefore request that
11 the State Board expeditiously issue a stay prior to June 15, 2007. There is no prejudice to
12 the Water Board or to the public from issuance of the stay, particularly in light of the
13 substantial issues raised in the Petition.

14

15 (2) The Public Will Not Be Substantially Harmed If a Stay Is Granted.

16

17 Petitioners are committed to completing the current air deposition study. Petitioners
18 have spent the better part of two years developing a work plan and completing a pilot study
19 for the air deposition study. The main body of work contemplated by the study is
20 underway. This effort will continue during the pendency of Petitioners' appeal and would
21 be unaffected by a stay of the new 13267 Letter. The granting of a stay would merely defer
22 deadlines which, otherwise, would compel Petitioners immediately to plan and begin
23 conducting greatly expanded new studies, the value and purpose of which are in significant
24 dispute. The 13267 Letter does not require Refinery Petitioners to reduce pollutants to any
25 water body, and the new studies are not based on any actual evidence that the Refinery
26 Petitioners' mercury emissions are greater than previously estimated. The requested stay
27 would simply maintain the status quo pending a decision on the merits, and would have no
28 impact on the public or on water quality.

1 Moreover, much of the new information being requested has no value in answering
2 the basic question: *how much mercury is being discharged to the Bay by the refineries*
3 *through aerial deposition, including direct deposit onto the surface of the Bay and*
4 *through runoff from other areas within the watershed.* Petitioners dispute the Water
5 Board's fundamental premise in requesting a mercury mass balance, i.e., that any
6 discrepancy between the amount of mercury entering the refineries in crude oil and the
7 amount leaving the refineries in waste streams and products must of necessity be emitted to
8 the air and therefore discharged to the Bay. This conclusion is not supported by logic or
9 science. Petitioners are being asked to collect information that is not needed to implement
10 the mercury TMDL and that will not inform or enhance the Water Board's ability to
11 address the refineries' contribution to mercury loading in the Bay. Among other things, the
12 Water Board fails to take into account the amount of mercury that is retained in a refinery
13 over long periods of time. In other words, a mass balance will never be achieved by trying
14 to equate the amount of mercury entering and leaving the refinery over a period of time,
15 ignoring the mercury that is known to accumulate in refinery equipment and that is
16 ultimately removed (if ever) only when the equipment is thoroughly cleaned or scrapped.
17 The amount of mercury that "could be discharged to the Bay" from the refineries is the sum
18 of the amount of mercury contained in their wastewater discharges plus the amount that is
19 emitted to the air and that can reasonably be expected to be deposited in the Bay. This can
20 best be determined through measurement, not through performance of a theoretical mass
21 balance.

22 As discussed in the Petition, the 13267 Letter's premise that the crude oil processed
23 by the Bay Area refineries contains significantly more mercury than previously believed
24 appears to be based solely on Water Board staff communications with one of the co-authors
25 of a crude oil characterization study being conducted by the U.S. Environmental Protection
26 Agency ("EPA"). The EPA study is in the process of being completed and reviewed for
27 publication, and when final, will supersede earlier studies of mercury in crude. The
28 updated data suggests that the amount of mercury in the crude oil processed by the Bay

1 Area refineries is less than 300 kg/yr, essentially the same order of magnitude as the 380
2 kg/yr estimated in the TMDL staff report. There is no new evidence indicating that these
3 estimates are inaccurate. If nothing else, any perceived discrepancies in the data support
4 issuance of a stay pending publication of the EPA study and confirmation of any data gaps
5 that may necessitate further study of this issue.

6 In sum, there would be no substantial harm to the public from a stay that will merely
7 maintain the status quo pending the State Board's review of this matter. This will avoid the
8 significant investment of resources and effort in an elaborate and speculative new research
9 program that, by all rights, should be found by the State Board to be unnecessary to protect
10 water quality. At the same time, issuance of the stay would not interfere with completion of
11 the air deposition study.

12
13 (3) The Petition Raises Substantial Questions of Law and Fact.

14 As discussed in more detail in the Petition, the fundamental question being posed in
15 this case is whether the Water Board has authority under section 13267 of the Water Code
16 to require the Bay Area petroleum refineries to conduct a mercury mass balance analysis
17 and to study the fate of all mercury that enters the refinery, whether or not there is any
18 realistic potential for that mercury to be discharged into San Francisco Bay. The Water
19 Board claims these requirements are "vital" to implementation of the mercury TMDL,
20 despite the Water Board's own assessment that the TMDL is supported by exemplary
21 science and represents one of the most robust, defensible TMDLs completed to date. The
22 air deposition element of the TMDL is already well-supported by actual air deposition
23 monitoring data developed by SFEI, and the Water Board twice adopted the TMDL with no
24 misgivings expressed about its accuracy or the role of the refineries in this element. While
25 Petitioners acknowledge that aerial deposition of listed pollutants can contribute to
26 conditions of impairment and may appropriately be taken into consideration during TMDL
27 development, the cross-media aspects of TMDL implementation raise significant factual
28 and legal issues that are appropriate for review by the State Board. Further, Petitioners

1 maintain that the Water Board has no authority to impose extensive research requirements
2 on the basis of a highly speculative claim that the refineries might be responsible for greater
3 amounts of airborne mercury than were recently determined during the TMDL development
4 process. Moreover, the staff's claim directly contradicts the Water Board's own assessment
5 and representations as to the quality and accuracy of the data supporting the TMDL,
6 including data on air deposition.

7 In sum, Petitioners dispute the scientific and factual predicates that the Water Board
8 asserts in support of the 13267 Letter — among other things, that the original air deposition
9 study is insufficient to assess the contribution of refinery emissions affecting water quality,
10 that conducting a mass balance study would add significant value beyond that of the air
11 deposition study, that a technically sound mass balance study is feasible and can be
12 performed in the required timeframe, and that a large “missing” component of mass in
13 incoming crude oil exists. Given the Water Board's own acknowledgment that it has
14 limited authority to regulate emissions to the atmosphere (TMDL, p. BPA-22) — and
15 Petitioners' contention that the Water Board has no authority to regulate air emissions —
16 the Water Board's use of the 13267 process in this manner raises significant issues of fact
17 and law that are sufficient to warrant the granting of a stay.

18

19 CONCLUSION

20

21 For the foregoing reasons, Petitioners respectfully request that the State Board stay
22 the 13267 Letter (except for the provision extending the deadline of the original air
23 deposition study to August 2008) pending a decision on the merits of the Verified Petition
24 for Review filed with the State Board on the date hereof. Petitioners request that the State
25 Board expeditiously issue a stay prior to the June 15, 2007 deadline for initial submission of
26 a sampling plan or as soon thereafter as possible in order to avoid irrecoverable investment

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1 of resources in advance of a decision on the merits.

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3 Dated: June 6, 2007.

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By 
Attorneys for Petitioners

1 VERIFICATION

2 I, Kevin Buchan, am Senior Coordinator, Bay Area and State Water Issues, for the
3 Western States Petroleum Association and have responsibility for oversight of water quality
4 regulatory and policy matters at WSPA member facilities located in the Bay Area. I have
5 read the foregoing Verified Request for Stay and believe that the statements made therein
6 are true and correct. If called as a witness to testify with respect to the matters stated
7 therein, I could and would competently do so under oath.

8 I declare under penalty of perjury under the laws of the State of California that the
9 foregoing is true and correct and that this verification was executed in Sacramento,
10 California, on June 6, 2007.

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13 
14 Kevin Buchan

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11 STATE WATER RESOURCES CONTROL BOARD
12
13 OF THE STATE OF CALIFORNIA

14	In the Matter of the Petition of)	
)	No.
15	CHEVRON PRODUCTS COMPANY,)	
	CONOCOPHILLIPS COMPANY, SHELL)	
16	OIL PRODUCTS US, TESORO)	<u>DECLARATION OF ALAN A</u>
	REFINING & MARKETING COMPANY,)	<u>SAVAGE, III IN SUPPORT OF</u>
17	VALERO REFINING COMPANY-)	<u>REQUEST FOR STAY</u>
	CALIFORNIA, and WESTERN STATES)	
18	PETROLEUM ASSOCIATION)	
)	
19	Request for Technical Report, California)	
	Regional Water Quality Control Board, San)	
20	Francisco Bay Region)	
)	
21	California Water Code § 13267)	
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22)	
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23)	

24
25 I, Alan A. Savage, III declare and state as follows:

26 I. I am the Environmental, Health and Safety Manager, at the Golden Eagle
27 Refinery in Martinez, California (the "Golden Eagle Refinery") which is owned and
28

1 operated by Tesoro Refining & Marketing Company ("Tesoro"). The statements herein are
2 based on my own personal knowledge or on information provided to me by knowledgeable
3 and responsible Tesoro personnel in the regular course of their duties at the Refinery that I
4 believe to be true. If called upon to do so, I could and would testify competently to the
5 truth of the following matters.

6 2. During the TMDL development efforts, the water and aerial deposition
7 loading of mercury to the Bay was determined. As a part of that effort, it is my
8 understanding that samples of wastewater, stormwater runoff, and ambient air were taken
9 by the Regional Monitoring Program (RMP). This ambient air monitoring data indicates
10 that the atmospheric deposition of mercury from all sources is estimated at about 82 kg/year
11 throughout the San Francisco Bay watershed (including both direct and indirect aerial
12 deposition to the Bay). This constitutes a small portion of the mercury identified in the
13 TMDL and confirms that aerial deposition, not just from refineries but from all sources, is
14 not a significant source of mercury to the Bay. Since sampling has already been performed
15 to determine the extent of aerial deposition of mercury to the Bay, this 13267 request is
16 unnecessary.

17 3. Tesoro has complied with the Water Board 13267 letter issued in February
18 2005, asking the refineries to conduct a collaborative study to estimate the total mass of
19 mercury emitted directly to the atmosphere per year. Per the request, sample collection of
20 refinery fuel gas was initiated May 2007 and is expected to continue for one year.
21 However, before Tesoro could collect and assess the information required by the February
22 2005, 13267 Letter, a second 13267 request was issued (May 2007) requiring significantly
23 more testing, and requiring that crude sampling be conducted in conjunction with fuel gas
24 sampling. The request asked for a significant amount of additional information in a short
25 period of time. Also, the request for crude sampling appears to conflict with the first 13267
26 letter since it requires the sampling to be concurrent with fuel gas sampling, which has
27 already started. And, the second 13267 letter did not allow for assessment of data from the
28 first study before asking for additional information on an aggressive time schedule.

1 4. A mass balance conducted over one year would not adequately account for
2 mercury known to accumulate in tanks and other equipment that are opened on a 10-20 year
3 schedule. Catalyst may be another part of the mass balance, but it is typically changed
4 during turnarounds, which only occur every 3-5 years. A one-year mass balance would
5 exclude both of these potentially significant sources.

6 5. Tesoro processes a varied crude slate at its Martinez Refinery. To accurately
7 develop an estimate of the amount of mercury in its crude supply along with an accurate
8 measure of the variability, a statistically significant number of samples must be assessed. If
9 crude oil mercury levels are not accurately measured for mean and standard deviation, there
10 is confusion about what the mercury levels actually are. It is important to assess statistical
11 uncertainty in a scientific manner. The Water Board appears to be using only the upper
12 bound of the mercury content estimates, which does not accurately represent the mercury
13 level in crude. Crude is a variable supply material. This variability affects the
14 understanding of mercury levels. An adequate sample size for testing must be used, to
15 effectively deal with the variability. And, more than one year is needed to adequately
16 assess all types of crude processed at the Tesoro refinery.

17 6. Variability is also an issue for finished product. Gasoline and diesel are
18 produced in different grades and with different components, and these vary further,
19 depending on the time of year. Adequate testing must be conducted to properly account for
20 the variability. Waste has even more variability than crude or finished product, so more
21 samples will be needed to assess the mercury content.

22 7. For all raw material (crude), finished product, and waste samples, there is a
23 concern of whether the small sample taken adequately represents the material. This is
24 particularly emphasized when the sample and amounts of mercury are very small in relation
25 to the amount of material processed or manufactured. For example, a 20 ml sample of
26 crude cannot be said with any degree of scientific certainty to be representative of an entire
27 shipment. Obtaining statistically reliable data on the mercury concentration of crude oil

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1 processed by the Martinez Refinery will be very burdensome, time-consuming and
2 expensive task, if it can be accomplished at all.

3 8. All solid and hazardous wastes leaving the refinery have been properly
4 managed under appropriate waste regulations. Mercury-containing waste is properly
5 managed to ensure that it is contained and that waste, or leachate from the waste, is
6 properly contained and does not impact the air or water. I am aware of no circumstance in
7 which mercury-containing waste generated by the Martinez Refinery has been improperly
8 managed or discharged directly or indirectly to the Bay.


9 9. Tesoro has not had adequate time to assess the cost of this study. Following is
10 a gross approximation of costs associated with refinery manpower, sample collection and
11 preparation, and analyses. One FTE ("full time equivalent") split between several refinery
12 employees (e.g., Lab Supervisor, Operations, and Waste Management) would be needed for
13 management of the samples. The time required for the study would detract from these
14 employees' normal duties. A preliminary projection of the cost of just this component of
15 the study would be in excess of one half million dollars, based on the following estimates:

16 One FTE	\$120,000
17 Shipment and packaging Costs	\$50,000
18 Flare Samples	\$45,000
19 Sample analyses	
20 Crude	\$50,000
21 Waste	\$50,000
22 Product	\$60,000
23 Fuel Gas	\$200,000
24 Total Cost of Study	\$575,000

25 This cost is assumed to be low, as there will be additional costs as the plan is more
26 developed. Tesoro has no basis for attempting to estimate the cost of conducting air
27 sampling during turnarounds, and does not believe this is feasible in any event, and
28 certainly not within the timeframe of the 13267 Letter.

1 I declare under penalty of perjury under the laws of the State of California that the
2 foregoing is true and correct. Executed this 6th day of June, 2007 at Martinez, California.

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Alan A. Savage, III

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16	CHEVRON PRODUCTS COMPANY,)	
17	CONOCOPHILLIPS COMPANY, SHELL)	<u>DECLARATION OF ALFRED</u>
18	OIL PRODUCTS US, TESORO)	<u>MIDDLETON IN SUPPORT OF</u>
19	REFINING & MARKETING COMPANY,)	<u>REQUEST FOR STAY</u>
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21	CALIFORNIA, and WESTERN STATES)	
22	PETROLEUM ASSOCIATION)	
23	Request for Technical Report, California)	
	Regional Water Quality Control Board, San)	
	Francisco Bay Region)	
	California Water Code § 13267)	
	_____)	

24 I, Alfred R. Middleton, declare and state as follows:

25 1. I am the Director of Environmental/Safety Affairs at the Valero Benicia
26 Refinery in Benicia, California (the "Benicia Refinery") which is owned and operated by
27 Valero Refining Company – California ("Valero"). The statements herein are based on my
28

1 own personal knowledge or on information provided to me by knowledgeable and
2 responsible Valero personnel in the regular course of their duties at the Benicia Refinery
3 that I believe to be true. If called upon to do so, I could and would testify competently to
4 the truth of the following matters.

5 2. My responsibilities as Director of Environmental/Safety Affairs include
6 ensuring that Valero operates the Benicia Refinery in compliance with all applicable
7 environmental laws, regulations and permits.

8 3. The Benicia Refinery currently discharges process wastewater and storm
9 water to the San Francisco Bay (particularly Carquinez Strait) under NPDES Permit No.
10 CA0005550 issued by the California Regional Water Quality Control Board, San Francisco
11 Bay Region ("Water Board") on October 10, 2002. A nominal amount of mercury,
12 approximately 0.000133 kg on an average daily basis, is contained in the Benicia
13 Refinery's wastewater. Valero is in compliance with its effluent limitations for mercury.

14 4. On February 17, 2005, the Water Board issued 13267 letters to the Bay Area
15 refineries asking them to conduct a collaborative study to estimate "the total mass of
16 mercury emitted directly to the atmosphere per year" from the refineries on a combined
17 basis (the "2005 Letter"). The Water Board stated that this information was needed in order
18 to better assess the significance of petroleum refineries as a source of mercury discharges
19 into San Francisco Bay, as well as to more accurately adapt implementation actions for
20 petroleum refineries commensurate with their mercury loads to the Bay as part of the
21 Mercury TMDL. Despite significant legal reservations, Valero agreed to conduct this air
22 deposition study in exchange for the Water Board's agreement not to request a mercury
23 mass balance and study of the fate of mercury in crude oil.

24 5. The air deposition study is currently being conducted. In conjunction with
25 this study, the Benicia Refinery volunteered to conduct a 12-month pilot study that was
26 recently completed on February 19, 2007. Significant technical difficulties were
27 encountered in selecting an appropriate location for the pilot testing and developing an
28 appropriate sampling, analytical and calculation methodology for the study. It is estimated

1 that the pilot study cost the Bay Area refineries, including Valero, \$131,000 in direct
2 expenses. To date, I estimate that it has cost Valero an additional \$80,000 to \$100,000 in
3 personnel time.

4 6. Based on the pilot study, it is expected that the mercury air deposition study
5 will involve monthly sampling of one or two fuel gas systems at each refinery for a period
6 of one year. In addition, five process vents (at four refineries) are expected to be sampled
7 twice during the year, once in the summer and once in the winter. This sampling program
8 is expected to yield data that are representative of mercury emissions from the refineries
9 and that can serve as a basis for estimating mass mercury emissions to the atmosphere

10 7. For Valero, the estimated cost of the sampling and analysis for the period set
11 forth in the 2005 Letter is more than \$150,000 for the 12 monthly fuel gas samples, and
12 more than \$23,000 for the process vent (the "Main Stack") that is to be sampled twice
13 during the study period, once in the summer and once in the winter.

14 8. Based on preliminary sampling data collected as part of the mercury air
15 deposition study at Valero's Benicia Refinery, air emissions of mercury are not significant.

16 9. On May 9, 2007, the Valero received a letter, dated May 7, 2007, entitled
17 "Requirement Under California Water Code Section 13267 For Submittal of Technical
18 Reports on Mercury in Crude Oil and Associated Product and Waste Streams in Bay Area
19 Petroleum Refineries to Assess Potential Discharges of Mercury Into San Francisco Bay"
20 ("13267 Letter") issued by the Executive Officer of the Water Board pursuant to Section
21 13267 of the California Water Code. The 13267 Letter requires Valero and the other
22 refineries to conduct a petroleum refinery mercury mass balance analysis (i.e., quantify the
23 amount of mercury entering and leaving the refineries through all potential pathways) and
24 to study the "fate" of that mercury. This is the same study that Valero objected to in 2004
25 and that the Water Board agreed not to request.

26 10. The new 13267 Letter requires submittal of the following information:

27 (i) the total mass of mercury emitted per year directly to the atmosphere,
28 as determined through monthly air sampling that accounts for emissions from all

1 combustion sources at the refinery, including boilers, heaters and co-generation
2 facilities, for a period of one continuous year;

3 (ii) measurement of mercury in refinery flare systems;
4 (iii) emissions monitoring during refinery turnarounds;
5 (iv) the concentration and amount of mercury contained in all crude oil
6 being processed at the time the air sampling is being conducted; and
7 (v) the concentration and amount of mercury contained in all waste
8 (other than wastewater) and product streams leaving the refinery, including
9 petroleum coke and material removed from sulfur recovery units.

10 11. The Benicia Refinery does not currently measure mercury content of its
11 incoming crudes, as the crude slates vary on a day-to-day, sometimes hour-to-hour basis,
12 with the potential for oil from numerous sources to be processed in a single day.
13 Calculations of mercury content would need to take into account not only the varied crude
14 slate, but also the fact that mercury content varies widely within the same type of crude oil
15 and even across a particular oil field.

16 12. In addition, the 13267 Letter requires monitoring of flare systems and
17 monitoring during refinery turnarounds. Currently, the Benicia Refinery does not have
18 sampling protocols in place for conducting this type of monitoring, and the challenges
19 associated with obtaining representative samples are enormous. Turnarounds require
20 significant planning to provide for personnel and facility safety. In the case of the Benicia
21 Refinery, the planning cycle is typically a two and half to three year process; this sampling
22 would add significantly to the challenge.

23 13. Without a better understanding of how these sampling and/or monitoring
24 activities would be conducted, and for how long, Valero is unable to quantify the cost of
25 this sampling effort. Regardless, I believe this effort would be complex, time-consuming
26 and resource-intensive, and the attendant costs, in terms of dollars, personnel and potential
27 disruption to operations, would be significant. Developing and coordinating a program
28 with multiple sample stations and different collection protocols, many of which have

1 significant worker safety and logistics issues, is very complex. Additional protocols would
2 have to be developed and tested, additional personnel training would have to occur, and
3 much greater attention to data quality assurance would be needed. All of these
4 considerations translate to additional costs and burdens, well beyond those assumed as part
5 of the original air deposition study. Valero estimates that the expanded study would require
6 1/4 to 1/3 full time staff position at a fully-burdened cost of approximately \$60,000 per
7 year.

8 14. As a gross approximation of sampling costs, and without admitting the need
9 for, or appropriateness of, any of this sampling, Valero estimates that the following
10 additional samples would be required under the expanded study requirements imposed by
11 the 13267 Letter: (i) sampling multiple crudes (assume 4 crudes per month at, per Frontier
12 Geosciences, at a cost of not less than \$120 per crude sample = \$5,760 per year); (ii)
13 sampling multiple products (assume 3 products (gas, jet, and diesel) per month, per Frontier
14 Geosciences, at a cost of not less than approximately \$120 per sample, plus \$120 per month
15 to analyze fluid coke = \$5,760 per year); (iii) sampling multiple waste streams at an
16 unknown frequency (assume 15 wastes shipped per month at approximately \$120 per
17 sample = \$21,600 per year); (iv) sampling flares at an unknown frequency (typically about
18 4 reportable flaring events per month; safe methods for sampling emissions from flares and
19 the associated costs are unknown); (v) sampling ambient air during turnarounds (protocols
20 not established); and (vii) other samples as may be specified by the Water Board. To
21 “account for emissions from all combustion sources” at the Benicia Refinery (25 sources),
22 as required in the 13267 Letter, I estimate the cost would be approximately \$300,000. All
23 told, the costs would be well in excess of \$500,000 and probably much more when all
24 associated development costs are included.

25 15. Benicia Refinery and contractor personnel demands are significant at
26 turnarounds and it will be very difficult to coordinate the work of this additional staff to
27 conduct this sampling with normal turnaround activities while at the same time meeting
28 safety and operational objectives. Moreover, locating appropriate sampling stations and

1 providing infrastructure (utilities) for them when a unit is shut down would be difficult if
2 not impossible. In my opinion and based on my years of experience, development of these
3 sampling protocols by the June 15, 2007 deadline specified in the 13267 Letter is not
4 achievable, except in the broadest and most tenuous of terms. Moreover, there is also the
5 possibility that some state agencies like the California Energy Commission may express a
6 preference as to when turnarounds should occur, due to then current supply conditions in
7 the market, and that in turn could affect these issues.

8 16. Even if an acceptable sampling protocol could be developed, turnarounds at
9 the Benicia Refinery are not annual events. Future turnarounds cannot be accelerated to
10 accommodate the study schedule without imposing operational burdens on Valero and
11 extraordinary costs. For the Benicia Refinery, the next refinery-wide turnaround is not
12 scheduled for a number of years. The cost of accelerating this schedule cannot be estimated
13 at this time, and in any event would be unacceptably high.

14 17. I am not aware of any evidence that mercury contained in refinery waste
15 from the Benicia Refinery reaches the Bay through improper waste management practices.
16 All wastes leaving the Benicia Refinery are properly managed in accordance with
17 applicable laws and regulations.

18
19 I declare under penalty of perjury under the laws of the State of California that the
20 foregoing is true and correct and that this verification was executed in Benicia, California
21 on June 6, 2007.

22
23 
24 Alfred R. Middleton

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16 WESTERN STATES PETROLEUM ASSOCIATION

11 STATE WATER RESOURCES CONTROL BOARD

13 OF THE STATE OF CALIFORNIA

15 In the Matter of the Petition of

No.

16 CHEVRON PRODUCTS COMPANY,
17 CONOCOPHILLIPS COMPANY, SHELL
18 OIL PRODUCTS US, TESORO
19 REFINING & MARKETING COMPANY,
20 VALERO REFINING COMPANY-
21 CALIFORNIA, and WESTERN STATES
22 PETROLEUM ASSOCIATION

DECLARATION OF LYNLEY
HARRIS IN SUPPORT OF REQUEST
FOR STAY

20 Request for Technical Report, California
21 Regional Water Quality Control Board, San
22 Francisco Bay Region

22 California Water Code § 13267

25 I, Lynley Harris, declare and state as follows:

26 1. I am the Manager, Environmental Affairs, at the Refinery which is owned
27 and operated by Shell Oil Products US in Martinez, California. The statements herein are
28

1 based on my own personal knowledge or on information provided to me by knowledgeable
2 and responsible Shell personnel in the regular course of their duties at the Refinery that I
3 believe to be true. If called upon to do so, I could and would testify competently to the
4 truth of the following matters.

5 2. My responsibilities as Manager, Environmental Affairs include ensuring that
6 Shell operates the Refinery in compliance with all applicable environmental laws,
7 regulations and permits.

8 3. The 13267 letter generally defines a scope of work for a research project that
9 cannot be fully defined, measured, quantified, evaluated and reported within the specified
10 time frame. The order requires the Bay Area refineries to fully characterize the sources,
11 chemistry, accumulation, disposition and environmental fate of mercury from petroleum
12 refining operations. Significantly more time is required to determine the variability of the
13 streams and determine an adequate sample size. Time is needed to develop and validate air
14 sampling methodology capable of detecting low concentrations of mercury. Ambient air
15 sampling is inherently more variable due to changing ambient conditions and far more
16 difficult to model than a point source. The existing fuel gas study is the only methodology
17 that could potentially meet these time requirements.

18 4. The Shell refinery has no major turnarounds scheduled during the prescribed
19 period for this study. It takes several years to plan a major turnaround, for significant
20 reasons due to safety, environmental, operational, product supply, and labor and material
21 availability, and it would be infeasible to schedule one simply to meet one of the
22 deliverables in the 13267 letter. This makes it impossible to meet both the schedule of
23 deliverables and the requirement to characterize air emissions during turnarounds.

24 5. Mercury accumulates within a refinery as part of residual materials within
25 process units, pipelines, vessels, tanks and other equipment. The Shell Martinez Refinery
26 includes approximately 25 production process units, 27 production support units, and 200
27 aboveground storage tanks where mercury could accumulate. The collection of residual
28

1 material samples from such equipment is usually only possible during process unit or
2 aboveground storage tank turnarounds.

3 6. The frequency for process unit turnarounds typically varies from two to
4 seven years, depending on the unit. The frequency for aboveground storage tanks typically
5 varies from 10 to 20 years, depending on the service and inspection history. In order to
6 gather fully representative analytical data that represents turnarounds for all process units,
7 the time frame for this investigation could be seven years or more. Not every piece of
8 equipment in a unit is opened or cleaned in each turnaround, thus potentially extending the
9 required period even longer. In order to fully account for all mercury accumulation within
10 storage tanks, the investigation time frame would need to be extended even further.

11 7. Crudes processed at the Shell Martinez Refinery come from approximately
12 5-10 different sources (production fields) per year. Purchased intermediates from about 10-
13 15 different sources (other refineries) are also periodically used as feedstock. The
14 intermediates are further refined in the process units downstream of the crude unit. There is
15 considerable variability of mercury content in materials from the same source, so multiple
16 samples from each source over the study period of time would be required to accurately
17 define this variability.

18 8. The refinery currently produces approximately 13 products and periodically
19 sells various intermediate streams to other refineries for further processing. These would
20 also require multiple samples to establish statistically significant results

21 9. Emissions during turnarounds (as well as normal operations) are already
22 controlled by various BAAQMD and EPA rules. Although these rules focus on
23 hydrocarbons, the control measures reduce emissions of other airborne contaminants. Air
24 emissions from sewer systems are already strictly regulated by BAAQMD Regulation 8-8
25 and EPA Benzene Waste NESHAPS (40CFR 61.340), thus requiring the use of closed
26 systems, source control, and/or emissions control equipment. Emissions from tank cleaning
27 and vessel depressurization are controlled by BAAQMD Regulation 8-5 and Regulation 8-
28

1 10, respectively. Therefore air sampling has minimal value during turnarounds.

2 10. Flaring is minimized and controlled by BAAQMD Regulation 12-12 and
3 EPA NSPS Subpart J (40CFR60.104). Flaring is now very infrequent and of short duration.
4 The sample volume that could be collected during a flaring event would be too small to
5 analyze for mercury at low concentrations. Except during the infrequent flaring events,
6 gases in the flare header are typically recovered by flare gas recovery compressors and
7 returned to refinery fuel gas (RFG). RFG is already being monitored by the existing
8 mercury air deposition study. Therefore it is redundant to measure mercury in the flare
9 header when not flaring, and infeasible during flaring events.

10 11. The primary fuel for the Cogeneration Facility is purchased PG&E natural
11 gas. Characterization of mercury from this source (as required by the 13267) is
12 unreasonable because other sources in the Bay Area that combust natural gas are not
13 required to do a similar study.

14 12. The scope of the investigation would likely require at least one full time
15 refinery employee to manage the project, plus periodic contractor support. Although this
16 cost is not insignificant (estimated at approximately \$200,000 - 300,000 annually), the
17 most significant impact is on the existing work that would need to be deferred or
18 rescheduled to accommodate the new workload. The most affected work will be proactive
19 efforts to improve existing systems and to further reduce actual emissions in all media.
20 Make-progress work will be dropped and only compliance and reactive issues will continue
21 during this study. This study will require knowledge of the refinery and cannot be turned
22 over in its entirety to a contractor.

23 13. A gross approximation of total costs for the work required by the 13267
24 Letter (if determined to be feasible) is \$926,210 - \$1,249,910, broken down as follows:
25 Analysis of liquids/solids: 1120-1820 samples/yr*\$115/sample = \$128,800 -
26 \$209,300/yr (\$115 per sample from Cebam (lab recommended in 13267))
27
28

- Crude and intermediate feedstock: 4-6 samples/month*12 mo*10 feeds = 480-720 samples
- Products & sold intermediates (liquids & solids): 3-5 samples/mo*12 mo*15 products=540-900
- Various waste and residuals: 100-200 yr

Products (gases): 3-5 samples/mo*12 mo*3 products=108-180samples/yr*\$600 = \$64,800-108,000 (\$600/sample based on existing approved fuel gas sampling plan)
Existing 13267 fuel gas study: 28 samples*\$600 = \$14,760

Air sampling numbers and costs unknown, but expected to be very significant. Based on the foregoing estimates, the total estimated sample costs (ex. air sampling) is expected to range between \$208,360 – \$332,060 (for 1256-2028 samples). Additional categories of anticipated costs include: (i) Contractor cost of existing fuel gas study (known): \$317,850; (ii) estimated additional contractor cost for expanded study 13267: \$200,00 - \$300,000; (iii) internal resources cost (estimate): \$200,000 – \$300,000.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this 6th day of June, 2007 at Martinez, California.


Lyndey Harris

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 WESTERN STATES PETROLEUM ASSOCIATION
 9

10
 11 STATE WATER RESOURCES CONTROL BOARD
 12
 13 OF THE STATE OF CALIFORNIA

14	_____)	
15	In the Matter of the Petition of)	No.
16	CHEVRON PRODUCTS COMPANY,)	
17	CONOCOPHILLIPS COMPANY, SHELL)	<u>DECLARATION OF PHILIP C. STERN</u>
18	OIL PRODUCTS US, TESORO)	<u>IN SUPPORT OF REQUEST FOR</u>
19	REFINING & MARKETING COMPANY,)	<u>STAY</u>
20	VALERO REFINING COMPANY-)	
21	CALIFORNIA, and WESTERN STATES)	
22	PETROLEUM ASSOCIATION)	
23	Request for Technical Report, California)	
	Regional Water Quality Control Board, San)	
	Francisco Bay Region)	
	California Water Code § 13267)	
	_____)	

24
 25 I, PHILIP C. STERN, to the best of my information and belief, and based on the
 26 information available to me at the time of this declaration, do hereby declare as follows:
 27
 28

1 1. I am the Environmental Services Manager at the ConocoPhillips Company
2 ("ConocoPhillips") San Francisco Refinery at Rodeo, California ("Refinery") and have held
3 this position for the last four years. I have held other positions in this and other refineries,
4 including seven years previously as this Refinery's Environmental Manager (1985 – 1992).

5 2. I have a Bachelor of Science degree in Chemical Engineering and have
6 worked in the petroleum industry for 29 years.

7 3. The Refinery discharges process wastewater and storm water to San Pablo
8 Bay under a National Pollutant Discharge Elimination System ("NPDES") permit. Mercury
9 is contained in the Refinery wastewater and is subject to numeric effluent limitations.

10 4. On or about May 9, 2007, the Water Board delivered a letter to the Refinery
11 entitled "Requirement Under California Water Code Section 13267 For Submittal of
12 Technical Reports on Mercury in Crude Oil and Associated Product and Waste Streams in
13 Bay Area Petroleum Refineries to Assess Potential Discharges of Mercury Into San
14 Francisco Bay" (the "13267 Letter"). The 13267 Letter requires ConocoPhillips to conduct
15 a "mass balance" analysis of mercury entering and leaving the Refinery for the purpose of
16 developing "an estimate of the amount of mercury originating from local petroleum
17 refineries that could be discharged to the Bay." In addition to measuring the amount of
18 mercury in the incoming crude oil and in all non-wastewater and product streams, the
19 13267 Letter requires ConocoPhillips to measure mercury emitted from all combustion
20 sources, fuel gas, and flare systems at the Refinery, including mercury emitted during
21 turnarounds. It also requires that ConocoPhillips evaluate the "fate" of this mercury and
22 attempt to determine how much of it would have been discharged the Bay via direct
23 deposition to the Bay surface or deposition elsewhere in the watershed that could enter the
24 Bay via tributaries or urban runoff.

25 5. In conjunction with efforts facilitated by the Western States Petroleum
26 Association, ConocoPhillips agreed to participate in and complete an air deposition study
27 precipitated by an earlier 13267 letter issued in 2005 by the Water Board. However, the
28 draft report that is now due in August 2008 has been significantly expanded by the 2007

1 13267 Letter to include a refinery mercury mass balance analysis and an evaluation of the
2 fate of mercury, as well as significantly expanded air sampling requirements. These
3 expanded elements are unreasonably burdensome and cannot be completed within the
4 specified timeframe as more fully described in the following paragraphs.

5 6. The 13267 Letter requires ConocoPhillips to undertake costly and
6 burdensome research, the scope of which is unnecessary for the Water Board to protect
7 water quality. The required tasks are further complicated by and perhaps made impossible
8 due to the short time period imposed by the Water Board in which to comply with the
9 13267 Letter's requirements (approximately one year). For example, it is highly unlikely
10 that the following data could be adequately and accurately obtained prior to the October 31,
11 2008 deadline imposed by the 13267 Letter: air sampling during unit turnarounds, flare gas
12 sampling, completing an accurate mercury mass balance, and evaluating the fate of mercury
13 in the environment from the data gathered from the expanded study scope.

14 7. Regarding the 13267 Letter's requirement to measure mercury from flare
15 systems, the sampling protocol developed for sampling fuel gas requires a 7-day continuous
16 fuel gas sample to collect enough mercury in a sample to measure it using the most
17 sensitive, lowest detection limit methods without generating uninformative non-detect
18 results. This sampling methodology cannot be applied to flaring events that are
19 intermittent, generally unpredictable, and are operationally kept to minimum duration to
20 comply with Bay Area Air Quality Management District regulations. Furthermore, a
21 sampling system to collect flare gas samples for mercury analysis has not yet been
22 developed, tested, or proven in practice.

23 8. The terms "*air sampling*" and "*sampling events ... to characterize air*
24 *emissions during facility turnarounds*" as used in the 13267 Letter are too vague to allow
25 ConocoPhillips to understand these requirements. It is not clear what medium is being
26 measured, what type of sample would be collected, or how this sample would be gathered.
27 Thus, an appropriate sampling methodology and the associated analytical protocols cannot
28 be developed without a better understanding of what is being requested.

1 9. Consultant and laboratory costs to conduct 12 months of refinery fuel gas
2 analysis would cost in the range of \$200,000 or more. It took approximately 15 months to
3 develop the sampling method, verify the method with field testing, and install sample
4 facilities as required in the 2005 13267 letter. Protocols for additional sampling of under-
5 specified requirements in the 2007 13267 Letter will have to be deduced, developed, and
6 tested, and additional personnel training will have to occur. This translates to additional
7 costs and burdens, well beyond those assumed as part of the study that arose from the 2005
8 13267 letter. The costs will likely be equal to or greater than the \$200,000 estimate for the
9 fuel gas sampling. This request also places a resource burden on Refinery environmental
10 staff whose time is already dedicated to ongoing compliance work. Utilizing a consultant
11 to manage these tasks would be expected to increase costs up to an additional \$75,000.

12 10. The 13267 Letter incorrectly assumes that all mercury entering the Refinery
13 also exits the Refinery on a more or less contemporaneous basis and, further, that it exits
14 through pathways that could impact the Bay. In fact, a large portion of the mercury that
15 enters the Refinery in crude oil accumulates within the Refinery (for example, by plating
16 out on equipment or concentrating in residues contained in tanks and other process
17 equipment) and may remain there for years. During refinery turnarounds, some (but not
18 necessarily all) of these materials are cleaned out, removed from the Refinery, and managed
19 in ways that do not result in direct or indirect discharges to the Bay. There is no feasible
20 way to quantify the amount of mercury that remains physically trapped in the Refinery in
21 the manner described above. Therefore, I do not believe that even a reasonably accurate
22 "mass balance" of mercury with respect to our Refinery operations can be determined.

23 11. Many of the sample locations involve complicated logistics and safety
24 issues. While coordinating a program to sample refinery fuel gas is relatively
25 straightforward, coordinating a program with multiple sample stations and different
26 collection protocols is far more complex. Additional protocols would have to be developed
27 and tested, additional personnel training would have to occur, and much greater attention to
28

1 data quality assurance would be needed. All of these considerations translate to additional
2 costs and burdens, well beyond those assumed as part of the original air deposition study.

3 12. To gain a realistic assessment of the mercury accumulation term of the mass
4 balance equation, if even such an equation can be determined at all, Refinery processes
5 would need to be studied over a term of approximately 20 years to accommodate the clean-
6 out and inspection schedules for refinery tankage and equipment where mercury-containing
7 residues may accumulate. Refinery turnarounds do not occur annually, and when they do
8 occur, they typically focus on any of a vast range of units. Information gained from any
9 particular turnaround at a particular refinery is not representative of refineries in general.
10 Thus, given that accumulation is significant, and that it cannot be assessed in a year, the
11 mass balance analysis as required by the 13267 Letter will not be accurate.

12
13 I declare under penalty of perjury under the laws of the State of California that the
14 foregoing is true and correct. Executed this 6 th day of June, 2007 at Rodeo,
15 California.

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17 
18 PHILIP C. STERN

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9

10
11 STATE WATER RESOURCES CONTROL BOARD

12 OF THE STATE OF CALIFORNIA
13

14 In the Matter of the Petition of)

No.

15 CHEVRON PRODUCTS COMPANY,)
16 CONOCOPHILLIPS COMPANY, SHELL)
OIL PRODUCTS US, TESORO)
17 REFINING & MARKETING COMPANY,)
VALERO REFINING COMPANY-)
18 CALIFORNIA, and WESTERN STATES)
PETROLEUM ASSOCIATION)

DECLARATION OF TERESA
LIZARRAGA IN SUPPORT OF
REQUEST FOR STAY

19 Request for Technical Report, California)
20 Regional Water Quality Control Board, San)
Francisco Bay Region)

21 California Water Code § 13267)
22)
23)

24
25 I, TERESA LIZARRAGA, to the best of my information and belief, and based on
26 the information available to me at the time of this declaration, do hereby declare as follows:
27
28

1 1. I am currently the Health, Environmental and Safety ("HES") Manager at
2 the Chevron Products Company's ("Chevron's") Richmond Refinery.

3 2. The Richmond Refinery received a letter dated May 7, 2007 from the
4 California Regional Water Quality Control Board -- San Francisco Bay Region ("Regional
5 Board"), requiring the specific studies and data collection at issue in the above-referenced
6 Petition for Review. That letter, issued pursuant to California Water Code Section 13267
7 ("2007 13267 letter") requires Chevron and other Bay Area refineries to conduct a refinery
8 "mass balance" for mercury for the stated purpose of assessing "the significance of
9 petroleum refineries as a source of mercury discharges into the San Francisco Bay."

10 3. The Richmond Refinery had also received a prior 13267 letter dated
11 February 17, 2005 requiring certain aerial emission testing for mercury for the purpose of
12 estimating the mass of mercury emitted directly to the atmosphere from the Bay Area
13 refineries. Despite reservations as to the legal authority to request such information,
14 Chevron and the Richmond Refinery are currently participating in the WSPA fuel gas study
15 that is intended to comply with that request.

16 4. At the time of the 2005 13267 letter, Chevron's agreement to participate in
17 the WSPA fuel gas study was a good faith attempt to work with the Regional Board on
18 issues of aerial deposition of mercury to the San Francisco Bay, and it was our
19 understanding that the agreed upon study was to be in lieu of the "mass balance" study that
20 is the focus of the 2007 13267 letter.

21 5. The new and additional requirements contained in the 2007 13267 letter, to
22 the extent those requirements are even feasible, would be time and resource intensive, with
23 a level of effort significantly greater than the ongoing air emission and transport study, with
24 little if any additional value to the Regional Board.

25 6. The 2007 13267 letter requires reports and associated analysis to identify the
26 amounts and mercury concentrations of "all waste (except wastewater) and product
27 streams." (Emphasis added.) Further, the letter requires that this data "should account for
28 mercury leaving the facility through all waste streams."

1 7. The Richmond Refinery makes numerous products including, but not limited
2 to, various grades of gasoline, diesel fuel, jet fuel, propane, butane, bunker fuel, lube oil
3 base stock, and tetramer. Distribution and use of products produced at the Richmond
4 Refinery goes well beyond the Bay Area, and includes areas outside of California that
5 would have no impact on the San Francisco Bay.

6 8. The Richmond Refinery can generate up to approximately 400 different
7 waste streams including small and off specification streams. Non-soil wastes generate in
8 excess of 500 waste shipments per year (on average). The majority of these waste
9 shipments are to disposal locations outside the Bay Area and would have no impact on the
10 San Francisco Bay.

11 9. Compliance with the 2007 13267 letter with regard to the additional waste
12 and product sampling requirements would result in extraordinary costs and operational
13 difficulties including (1) the need to develop additional sampling protocols; (2) hire and
14 train additional personnel to conduct the sampling; (3) increased analytical costs;
15 (4) increased bin rental costs associated with longer storage times to accommodate the
16 sampling; (5) increased hazardous material storage space needs due to the longer storage
17 times to accommodate the additional sampling; and (6) increased safety and environmental
18 risks associated with having to access the raw materials, longer storage periods, increased
19 storage volumes, increased risk and opportunity for spills, etc.

20 10. The 2007 13267 letter requires sampling for mercury emissions in flare
21 systems, as well as a characterization of air emissions during turnarounds. To conduct
22 mercury emissions testing of our flare systems would require efforts that are different from
23 the sampling currently done. To my knowledge, such a procedure and design would have
24 to be developed because none currently exist. Such an effort would likely be significantly
25 more complex than the development of the protocol for sampling fuel gas which took
26 nearly 11 months, not including the pilot testing. Additionally, flares are safety devices that
27 are critical to refinery operations. Changes to a system which may contain flammable and
28 toxic gases can create significant safety concerns that must be carefully designed, planned

1 and implemented with the most rigorous of protocols requiring a significant effort and
2 expense. Although it is not clear exactly what actions are required by the 2007 13267
3 letter, "characterization of air emissions during facility turnarounds" would likely require
4 procedure and protocol design and development that is even more complex than for the
5 flare testing.

6 11. All of the above procedures that would need to be developed will likely also
7 require pilot testing to ensure that the activities are generating meaningful results.

8 12. A meaningful mass balance is not feasible in the timeframe required by the
9 2007 13267 letter due to recognized accumulation of mercury in vessels, tanks and other
10 process equipment that cannot be quantified in the timeframe required. Refinery equipment
11 turnaround intervals vary widely depending on the type of equipment, but major process
12 equipment often runs on 5-year cycles. Additionally, the maintenance of tanks and other
13 vessels where significant amounts of mercury are known to accumulate can be on 10-year
14 maintenance cycles, or longer.

15 13. Taking production/storage equipment down prematurely to accommodate
16 the mass balance study would create an enormous operational burden on the refinery due to
17 the massive and multiyear planning that takes place for a major turnaround to occur.
18 Additionally, unnecessary turnarounds or curtailment can cost the refinery millions of
19 dollars in lost production, not to mention the potential for impacts to society as a whole by
20 having refineries shut down or curtailed more often than would otherwise be necessary.

21 I declare under penalty of perjury under the laws of the State of California that the
22 foregoing is true and correct. Executed this 5th day of June, 2007 at Richmond,
23 California.

24
25 
26 TERESA LIZARRAGA
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